

WHAT IS CLAIMED IS:

1. An encoding apparatus comprising:
a first encoder for encoding inputted picture information at a first rate or first resolution; and
a second encoder for encoding said inputted picture information at a second rate lower than said first rate or at second resolution lower than said first resolution;
wherein, when said second encoder encodes picture information, said second encoder encodes said picture information by use of encoding information of picture information in said first encoder corresponding to said picture information, and said encoding apparatus outputs the picture information encoded by said first encoder and said second encoder, respectively.
2. An encoding apparatus according to claim 1, wherein said second encoder encodes corresponding picture information with a predetermined time lag from an encoding timing of picture information by said first encoder.
3. An encoding apparatus according to claim 1, wherein said encoding information is a quantization value.
4. An encoding apparatus according to claim 1, wherein said encoding information is changeover information of intra picture encoding or inter picture encoding of a macro block of picture information in

said first encoder.

5. An encoding apparatus comprising:

a first encoder including a picture information input unit for inputting first picture information, a first judge block for conducting changeover judgment of intra picture encoding and inter picture encoding, a first quantization unit for conducting quantization and a rate controller for conducting rate control, said first encoder encoding first picture information inputted from said picture information input unit at a first rate or first resolution; and

a second encoder including a scaler block for scaling said first picture information and generating second picture information, a second judge block for conducting changeover judgment of intra picture encoding and inter picture encoding, a second quantization unit for conducting quantization of said second picture information and a second rate controller for conducting rate control of said second picture information by use of a parameter, said second encoder encoding said second picture information at a second rate lower than said first rate or at second resolution lower than said first resolution;

wherein, when said second encoder encodes said second picture information, said second rate controller refers to the changeover information of said first judge block between said intra picture encoding

and said inter picture encoding, or said parameter used for the rate control in said first rate controller, said second judge block refers to said changeover information of said first judge block between intra picture encoding and inter picture encoding, and when a predetermined change exists in said parameter so referred to, said second rate controller executes rate control of the information amount in response to said predetermined change, said second picture information is encoded, and the first and second picture information encoded by said first encoder and said second encoder, respectively, are outputted.

6. An encoding apparatus according to claim 5, wherein said parameter is a generated code amount generated during encoding by said first encoder or a quantization value or a quantizer scale in said first quantization unit; when said parameter changes beyond a predetermined value, said second rate controller increases the quantization value in said second encoder and decreases the generation code amount or a frame rate in response to the change.

7. An encoding apparatus according to claim 1, wherein said first encoder is an MPEG2 encoder and said second encoder is an MPEG4 encoder.

8. An encoding apparatus according to claim 5, wherein said first encoder is an MPEG2 encoder and said second encoder is an MPEG4 encoder.

9. An encoding method using a first encoder for

encoding inputted picture information at a first rate or first resolution and a second encoder for encoding the inputted picture information at a second rate lower than said first rate or at second resolution lower than said first resolution, said encoding method comprising the steps of:

encoding picture information by use of said first encoder;

when picture information is encoded by use of said second encoder, encoding said picture information by use of encoding information of picture information in said first encoder corresponding to said picture information; and

outputting first and second picture information encoded by said first and second encoders, respectively.

10. A video camera capable of recording picture information taken to a recording medium, comprising:

a first encoder for encoding picture information taken at a first rate or first resolution;

a second encoder for encoding said picture information taken at a second rate lower than said first rate or at second resolution lower than said first resolution;

a recorder for recording picture information;
and

a transmitter for transmitting the picture information to outside;

wherein, when said second encoder encodes picture information, said second encoder encode said picture information by use of encoding information of picture information in said first encoder corresponding to said picture information;

said recorder records said picture information encoded by said first encoder; and

said transmitter transmits said picture information encoded by said second encoder to outside.

11. An encoding method according to claim 9, wherein said first encoder is an MPEG2 encoder and said second encoder is an MPEG4 encoder.

12. A video camera according to claim 10, wherein said first encoder is an MPEG2 encoder and said second encoder is an MPEG4 encoder.

13. A digital signal inputting/outputting apparatus comprising:

an input unit for inputting a digital signal from outside;

a first encoder for encoding the inputted digital signal at a first rate or first resolution;

a second encoder for encoding the inputted digital signal at a second rate lower than said first rate or at second resolution lower than said first resolution; and

an output unit for outputting a digital signal to outside;

wherein, when said second encoder encodes

picture information, said second encoder encodes said picture information by use of encoding information of picture information in said first encoder corresponding to said picture information, and said output unit outputs the picture information encoded by said first encoder to a recording medium and the picture information encoded by said second encoder to a communication terminal.

14. An encoding apparatus comprising:

a first encoder for encoding the inputted picture information at a first rate or first resolution;

a second encoder for encoding the inputted picture information at a second rate lower than said first rate or at second resolution lower than said first resolution; and

a changeover block for switching a first mode in which, when said second encoder encodes picture information, said second encoder encodes said picture information by use of encoding information of picture information in said first encoder corresponding to said picture information, and outputs the picture information so encoded, and a second mode in which, when said second encoder encodes picture information, said second encoder encodes said picture information without using an encoder of picture information in said first encoder corresponding to said picture information, and outputs the picture information so encoded.

15. An encoding apparatus comprising:

a first encoder for encoding inputted picture information by a first system having a first rate or first resolution; and

a second encoder for encoding the inputted picture information by a second system having a second rate lower than said first rate or at second resolution lower than said first resolution;

wherein picture information containing a scene change that can be normally encoded by said first encoder but cannot cope with said scene change by use of only said second encoder and invites a frame skip is inputted, and is encoded by said second system without the frame skip.

16. An encoding apparatus comprising:

a first encoder for encoding inputted picture information at a first rate or first resolution;

a second encoder for encoding the inputted picture information at a second rate lower than said first rate or at second resolution lower than said first resolution; and

first and second modes for outputting the picture information encoded by said second encoder;

wherein, when picture information containing a scene change that can be normally encoded by said first encoder but cannot cope with said scene change by use of only said second encoder and invites a frame skip is inputted, the picture information outputted in

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said first mode is outputted without the frame skip and the picture information outputted in said second mode is outputted with the frame skip.